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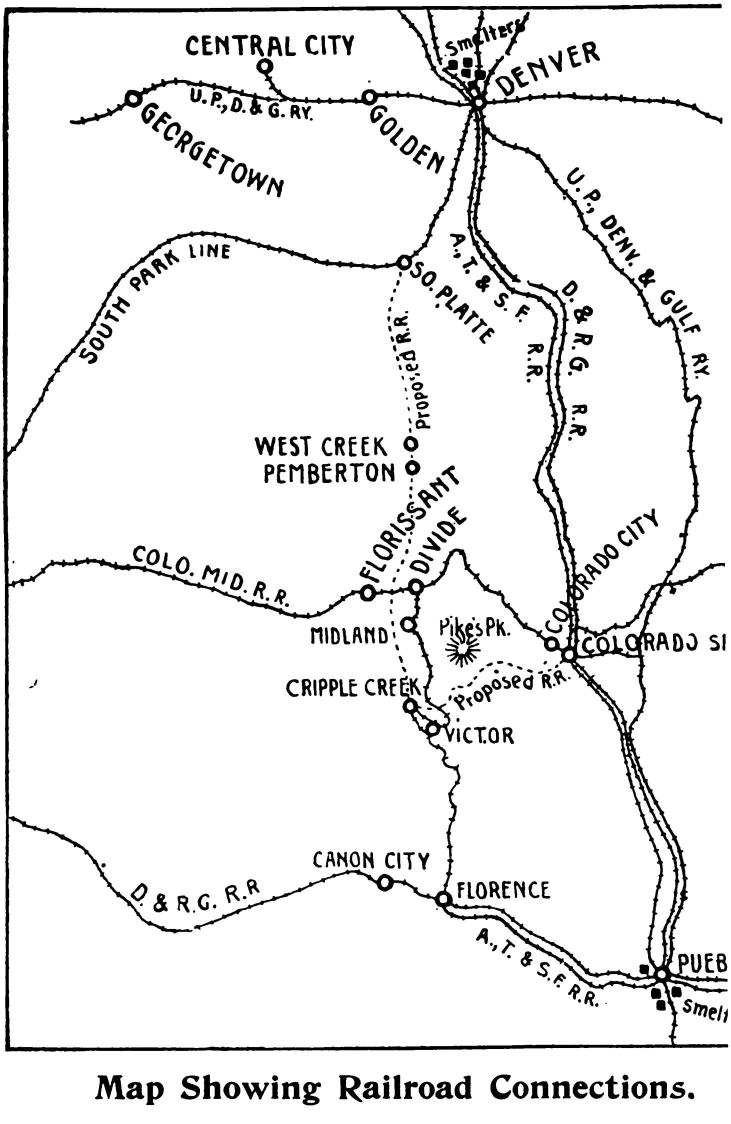
CRIPPLE CREEK MINING DISTRICT.



Map Showing Railroad Connections.

JCBranner

THE
CRIPPLE CREEK MINING DISTRIC

SITUATE IN

El Paso, Park, and Fremont Counties, Colorado

PAPERS ON THE

HISTORY, GEOLOGY, MINING STATISTICS, ET
By CHAS. J. MOORE, Mining Engineer, Etc, Etc.

HEALTH IN HIGH ALTITUDES,
By J. A. WHITING, M. D.

LIFE IN A MINING CAMP,
By MRS. T. P. AIRHEART.

PREPARED UNDER THE AUSPICES OF
THE CRIPPLE CREEK DELEGATION
TO THE
FIRST INTERNATIONAL GOLD MINING CONVENTION,
HELD IN THE CITY OF
Denver, Colo., July 7-8-9, 1897.

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THE MORNING TIMES.
Cripple Creek, Colo.

208557

PREFACE.

This pamphlet is prepared as a thoroughly unbiased and tr statement of the mining industry of the Cripple Creek Gold Minin trict, its history, progress and results; also its climate, health and life.

The difficulty of obtaining absolutely reliable statistics was emph strongly during the preparation of this pamphlet in the minds of the Cr Creek delegation to the Gold Convention, and the necessity of such gov mental supervision of the western mining districts as will result truthful returns of the amount and value of the ores produced.

In the state of Colorado at the present time, the State Commissioner mines depends entirely upon the voluntary action of the mine own managers and superintendents for his statistics. In many cases these refused and thus renders a correct statement of the production of district almost an impossibility.

Thanks are due Mr. Harry A. Lee, State Commissioner of Mines, for courtesy in permitting the use of statistics heretofore unpublished reg ing the production of the Cripple Creek district during the year 1 and also of Mr. Hogar-Miller of London, England, for the statistics r tive to the production of South Africa and Westralia with investmen these countries and their comparison with Cripple Creek.

THE CRIPPLE CREEK DELEGATIO

CITY OF CRIPPLE CREEK.

Geo. Pearce, Mayor.
C. J. Moore,
John J. Wyatt,
B. F. Montgomery,
T. P. Airheart,
C. B. Riley.

GOLD MINING STOCK EXCHA

Clint. S. Fletcher,
H. L. Shepherd,
Chas. N. Miller,
W. A. Delany,
E. N. Bement.

CHAMBER OF COMMERCE.

M. W. Levy,
J. A. Whiting,
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Charles A. Keith,
J. E. Hunter.

TRADES ASSEMBLY.

Dave Cohn,
H. M. Andrew,
C. A. Oakes,
T. F. Gorman,
Ed. Campbell.

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[illegible]

THE CRIPPLE CREEK GOLD MINING DISTRICT,

COLORADO, U. S. A.

General Description and History.

This region which has become, during the past five years, the leading gold mining district in the State of Colorado, occupies an area of about 140 square miles in the southwest corner of El Paso County, the northern portion of Fremont County and the southeast corner of Park County.

The principal prospecting and mining operations are confined to a section of 56 square miles, the center of which is distant nine miles southwest of the summit of Pike's Peak, but nearly all the pay mines have thus far been found within nine square miles occupying an irregular parallelogram measuring about three and one half miles from north to south by two and one-half miles from east to west. This central area is only seven per cent of the entire area within which pay mines may be expected additional to those already discovered.

The general elevation of the country varies from 8,500 feet above the sea level in the lowest valleys up to 10,800 feet, the summit of the highest hill and may be described topographically as a highly picturesque region of rounded grassy hills with narrow valleys between and scenery variegated with many groves of aspen, spruce and pine.

The principal mines are still situated upon some one of the nine main hills which are known as Gold, Globe, Ironclad, Bull, Raven, Guyot, Beacon, Battle and Squaw, and many promising prospects on the surrounding mountains of Rhyolite, Knob, Red Mountain, Mineral, Tenderfoot, Carbonate, Galena, Trachyte, Cow, Big Bull, Brind, Straub, Grouse Mountain, Signal and Pisgah.

From the summits of these hills and mountains magnificent views are visible of the great massive Pike's Peak mountain northeast, the Tarryall mountains on the northwest, the great South Park beyond bounded on the west by the snowy peaks of the Mosquito and Park ranges, and still further west and southwest part of the Saguache mountains forming the backbone of the continent, and the Sangre de Cristo, a spur from the latter forming the northeast boundary of the San Luis Park; to the south the Green Horn mountains and Wet Mountain valley in which lie the mining regions of Custer County, and Raton mountains forming a portion of the boundary between Colorado and New Mexico.

The average elevation of the district above sea level is about 9,700 feet.

Gold was first discovered in the region as early as the year 1859, during the first rush to Colorado under the name of the Pike's Peak excitement, but the prospectors at that date spent little time among these smooth grass covered valleys and pushed westward to the rugged mountains of the Mosquito range, making their first gold discoveries in the regions of Fairplay and Alma.

1891. It was not until 1891, that attention was once more directed to the Pike's Peak region by the valuable results obtained from the first producing mine in this district namely the El Paso claim in Poverty Gulch. The first shipment was made from this mine in this year and prospectors began to come to the region, a town site being located under the name of Fremont. These first prospectors as usual comprised the unfortunate of various sections of the country and brought no means for the development of the district, in spite of which the production of the camp for the first few months of its existence in 1891, amounted to not less than 10,000 ounces or $200,000. Up to this time the region had been known as an excellent grazing country and Messrs. Bennett and Myers, the owners of the ranches, were for some time loath to credit the fact that gold in payable quantities had been discovered on their cattle ranches

1892. The nearest railroad station at this time was Divide, on the Colorado Midland, distant 18 miles to the north of the present town of Cripple Creek and 101 miles from Denver and the heavy expenses of hauling supplies of all kinds from this station into the camp, and hauling out the ore, made it impossible during 1891 and 1892 to market ores that ran less than two and a half ounces or $50 per ton. Nine-tenths of the product was shipped to the smelting works at Denver and Pueblo and the cost of mining, transportation and treatment ranged from $30 to $35 per ton. In spite of these drawbacks, however, the output advanced and showed a total production of $587,310 or 29,360 ounces for the year 1892.

1893. The general public, however, was still skeptical about the value and permanence of this new district, so that the first half of the year 1893 showed but little increase in the production and investment of outside capital. In June, 1893, the closing of the Indian mints to the coinage of silver was immediately responded to in the United States by the closing down of the great majority of the silver mines of the western states in which Colorado took the lead; so many experienced miners being thus suddenly thrown out of employment in their regular fields was a benefit to the Cripple Creek mining region, and the latter part of 1893, beheld a large influx of population, many of whom were skilled miners and prospectors. Added to this the first discoveries of payable ore in the Portland mine became known, and the Independence, which have been two of the greatest producers of the district.

The total output for the year 1893, was estimated at 100,520 ounces or $2,010,400.

New towns were started during the year 1893, the largest of which was the town of Victor, near the southeast corner of the district, as Cripple Creek is situated near the northwest corner.

1894. Although these exceedingly promising results had attracted much attention through the east and elsewhere, and many who had first condemned the region began to think it possible they might have been mistaken, the district met with a great drawback in the year 1894, from the miners' strike which, starting at the first of January, was not concluded and finally adjusted until the end of June, and during all these months nearly all the mines of the region were idle. Nevertheless the end of the year 1894, witnessed a great and substantial increase in the production of the district which reached a total for the year 1894, of $3,250,000 or 162,500 ounces.

1895. On July 2, 1894, the first train was run out of Cripple Creek upon the Florence and Cripple Creek railroad, just completed, which connects at its southern end with the great Denver & Rio Grande system at the town of Florence, distant in an air line of 28 miles, or by railroad of 40.3 miles south of the town of Cripple Creek, and 129 miles from the city of Denver.

The completion of this railroad rendered available cheaper fuel and supplies of various kinds, and a cheaper transportation to the valley smelters, so that a lower grade of ore became profitable and the year 1895, witnessed a great advance and expansion in the mining industry and all branches of trade connected therewith. In this year also the fame of the district began to go abroad reaching London and other financial centers of the old world, and asserting the right of Cripple Creek to be considered as a favorable field for mining investment even in the height of the South Africa boom. Leading mining engineers of the old world were sent by their clients to examine and report upon the right of this youngest of the mining camps of the west to assert such claims, and most of them returned with a report that the average value of the ores were astonishingly high and scarcely equalled by any other mining district of the world, but that the permanency of the mines and their continued values as greater depth was obtained was still somewhat uncertain. The total production for the year 1895, was 348,500 ounces or $6,970,000, considerably more than twice as much as the preceding year.

The Midland Terminal railroad twenty-eight miles long was completed into Cripple Creek in December, 1895, connecting with the Colorado Midland system at its northern end at Divide, but for some months previous to reaching the town of Cripple Creek, however, this railroad had been already securing its quota of freight and assisting materially in reducing the general expenses of mining and ore transportation.

1896. Last year showed a continued increase in the mining industry although a serious blow to the district was the occurrence of the two great fires in the town of Cripple Creek on April 24th and 25th, in which the whole of the business portion of the town was entirely destroyed. The rebuilding of this town and the erection of the fine stone and brick blocks which now exist withdrew from mining a very large proportion of local capital, and this was not fully offset by a considerable increase in the foreign capital which was invested in the district during 1896.

The leasing system expanded considerably during 1895 and 1896, with a result of opening up in the latter year a greater number of new producers than in any of the preceding years. This in its turn stimulated the erection of new mills for the treatment of the ores and the reports of the great activity of the district stimulated also immigration. The total production for the year 1896 was 455,000 ounces or $9,100,000.

The first six months of the present year have witnessed a continued increase in the production. Returns for the same being as follows: January, 42,081 ounces, $841,620; February, 40,475 ounces, $809,510; March, 50,162 ounces, $1,003,250; April, 52,500 ounces $1,050,000; May, 55,000 ounces, $1,100 000; June, 59,083 ounces, $1,181,663 (estimated); total for six months, 299301 ounces; value, $5,9986,043, and this constant increase shows every evidence of continuing to the end of the year.

As a further evidence of the increase in the business of the district, the following returns of the ore shipped out by the railroads during the last eighteen months are submitted viz:

	F. & C. C. Ry.	Mid. Ter. Ry.
First six months of 1896............	35,274 tons	27,012 tons
Last six months of 1896............	51,365 tons	39,397 tons
First six months of 1897............	64,138 tons	55,767 tons
Total	150,777 tons	122,176 tons

In addition to this it is estimated that 50,000 tons were treated in the local cyanide, chlorination and stamp mills during the same period.

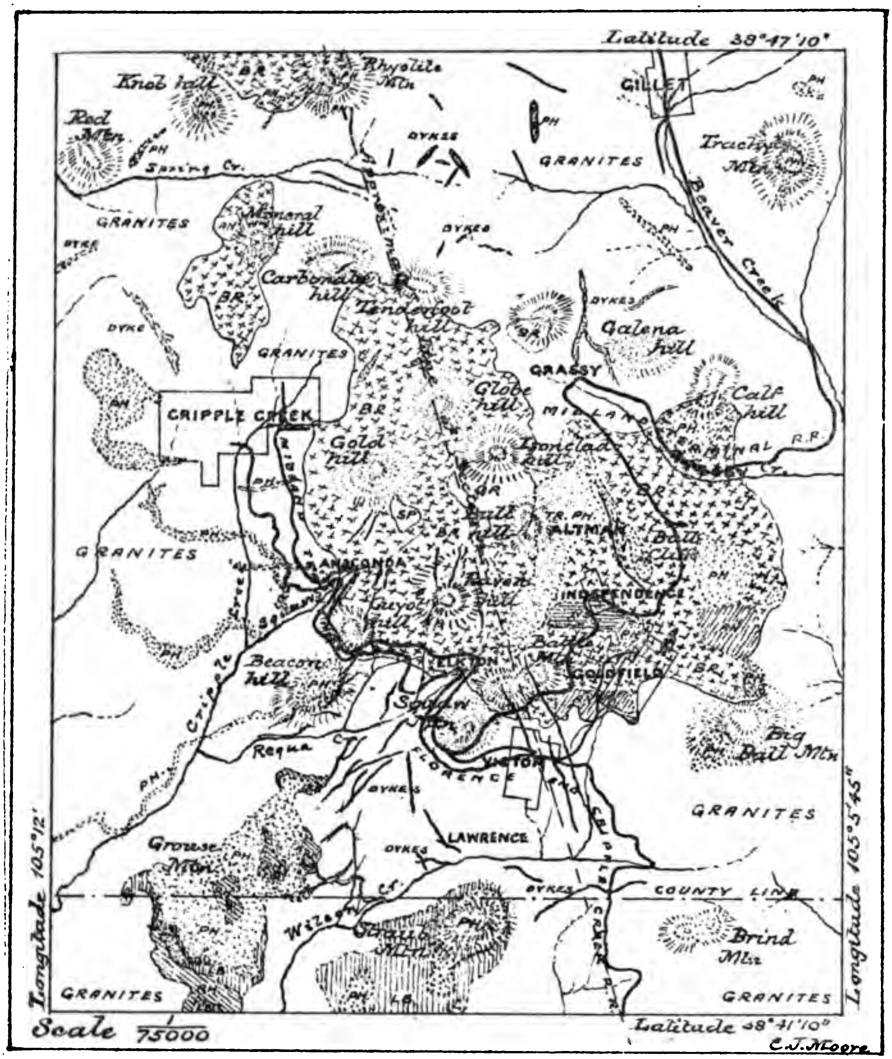
The population of the district at the present time is conservatively estimated upon the basis of the registration and election of November and April last, also a careful directory published last October at 40,000, apportioned among the different towns of the district as follows: Cripple Creek, 20,000; Victor, 9,000; Altman, Anaconda, Elkton, Gillett, Independence, Lawrence, 11,000.

In the district there are six public sampling works with a capacity of 600 ton per day of ten hours. The El Paso Reduction Works (chlorination) at Gillett with a capacity of 50 tons per diem; The Brodie Cyanide Mill at Mound City of 40 tons; The Turner Cyanide and Chlorination Mill at Elkton, with a capacity of 70 tons per diem; also the Geyser electro-Cyanide Mill, with a capacity of 30 tons per diem. In adjacent towns supplied entirely with ores from Cripple Creek, the mill capacity is as follows: The Colorado-Philadelphia Reduction Company at Colorado City, 37 miles distant (chlorination) having a capacity of 150 tons daily; at Florence, The Metallic Extraction Company (cyanide) having a capacity of 300 tons per diem. The London and Cripple Creek Works (Cyanide) with a capacity of 100 tons per diem, and a new chlorination plant in process of erection at Florence with a capacity of 150 tons, and a new chlorination mill about to be erected near the borders of Colorado Springs and Colorado City.

In addition to these mills, all the high grade ore of Cripple Creek exceeding two ounces per ton in value, estimated at the present time as 350 tons per diem, is shipped to the smelting works at Pueblo, Denver and Leadville, and occasional lots of free gold are smelted in small local furnaces and shipped direct to the United States branch mint in Denver.

In the early history of the camp several free gold stamp mills, consisting of stamps and amalgamating plates were erected in different portions of the district on the assumption that the oxidized ores were permanent and not merely superficial as has since been proven upon development and some of those mills are still running, aggregating 80 stamps in number and producing gold retorts which are sent direct to the mint in Denver and the concentrates which are shipped to the smelters aforesaid.

These mills treat ore as low as $9 or $10 per ton in value and the daily average at the present time treated in these mills is about 75 tons, chiefly produced from dumps and low grade superficial ores.



Geological map of Cripple Creek District based upon U.S. Geological Survey.

GEOLOGICAL FORMATION.

* * *

The geological formation of the district was for sometime after the first discoveries of gold in 1891 undetermined as most of the developments were superficial, but in 1893 and 1894, a careful examination of the district was made by the government geologists, Messrs. Cross and Penrose, resulting in the publication at the end of the latter year of the folio No. 7 of the Geological Atlas of the United States, containing a summary of the geology accompanied by four maps of the district, topographical and geological, and some structural sections on too small a scale to be entirely satisfactory. Last year, in addition to these, a monograph was published by the U. S. Geological Survey containing the extended results of examination of the district by the same authors with detailed sketches, additional maps, and brief descriptions of the principal mines and of their geological features. In addition to these are papers on the geology by the present and other writers in the transactions of the American Institute of Mining Engineers and the Colorado Scientific Society, especially the latter, with many interesting data regarding the mineralogy and other features of the district.

The district in brief consists of a granite floor upraised in the central portion of the region above tne general average level of the surrounding country and in the general form of an exceedingly irregular basin. The irregularities of the general granite surface being nearly as great as those of the present surface of the country. In this basin at the close of tertiary time a violent volcanic outburst took place, preceded by the usual earthquake and succeeded by the same phenomena, and before quietude finally settled over the region various eruptive rocks were thrown out in fragmental form, and afterwards cemented together on the ground by silicious or quartz bear-

Legend to Map and Section

Granites (archaean)	GR.
Andesites (chiefly augitic)	AN
Phonolites	PH.
Breccia (chiefly andesitic)	BR.
Rhyolite	RH.
Nepheline-syenite	NS.
Lake beds	LB

ing waters accompanying the various outbursts. In addition to this rock which is technically known as "breccia" or locally, by the miners, as "porphyry," there were somewhat limited flows of molten lava similar to what is seen at the present day flowing from the volcanoes in Mexico, South America, Aetna and Vesuvius in Europe.

The final throes of this volcanic region resulted in the formation of numerous fissures which were immediately filled by molten rock, afterwards cooled into what are known as the dykes of the region penetrating all the pre-existent rocks. These dykes comprise two different types of rock; one phonolite, which is a rock rarely found in the United States, and only known and developed elsewhere to any great extent in the Black Hills region of Dakota. The other dyke rocks are basalts of two or three types and both rocks have had important influence upon vein formation and ore deposition. The so called porphyry is principally comprised of fragments of andesite, but in some places both phonolite and granite fragments are included in the general porphyritic mass, the latter being caught up from the throat of the volcanic vents and afterwards consolidated in the general breccia rocks, and also including fragments and boulders of granite lying upon the ancient surface of the basin.

It should be mentioned also that prior to the time of the Cripple Creek volcano ancient fissures had been formed in the granite floor probably the result of the forces which raised the Pike's Peak massive and the Colorado front range of which Pike's Peak forms a portion, and these fissures are filled for the most part, with a basic dyke rock known as diabase, differing entirely from the phonolite and basalts, and the andesite of the later eruptions. In cooling, innumerable cracks were formed by the contraction of the great volcanic mass, in addition to the main fissures caused by seismic disturbances, and the final flow of the silicious waters deposited in the majority of these cooling cracks as well as in the main fissures, quartz as a vein stone accompanied by tellurium, gold, silver and iron as metallic elements. The superficial decomposition of the country due to the action of the elements and weather, especially the carbonic acid contained in rain and snow waters, has resulted in the oxidization of the veins for depths varying from fifty to 400 feet feet below the present ground surface. Below this oxidized zone in the veins live ores are reached, consisting chiefly of tellurides, of gold and silver in the mineralogical forms known as sylvanite and calaverite chiefly the latter, and the average composition of these ores show the following proportions of the three metals: Tellurium, 57.45 per cent; gold 40.6 per cent; silver 1.95 per cent.

Occasionally galena is found and there is a narrow belt extending across the northwestern portion of the district in which this mineral appears in every vein, but as a rule the presence of galena indicates much higher per cent of silver in the vein than ordinarily and less gold. In a very few veins iron pyrites has been found carrying gold in paying quantities; in one vein in the northern portion of the district gold has been obtained as high as 2.5 ounces in a narrow vein of pyrite, showing also some slight indication of copper. It is a peculiarity of the region that so much less iron is found accompanying the veins than in most gold bearing districts. As a rule it is not to be considered as a prominent ingredient in any vein, but rather as a general impregnation of the vein and the country rock immediately surrounding, and it usually indicates when found in the country rock, an approach to a vein. Copper is entirely absent from the veins of the volcanic formation in the central region, but is occasionally found in veins accompanying the diabase dykes in the ancient granite, though heretofore not in commercial quantities.

To the west of the main Cripple Creek district and covering a large extent of country tributary to the town of Cripple Creek, there is a great development of various volcanic rocks more in the nature of lava flows than similar to the violent outbursts of the Cripple Creek volcano, and through these rocks there are numerous veins all yielding low grade gold values. Several minor mining camps have been established over this area extending westward as far as Badger Creek, distant about 12 miles from Salida on the Arkansas river, and as developments are made in these various camps, such as Bare Hills City, Freshwater, Guffey, Cameron, Whitehorn, Badger, etc., paying ore bodies are gradually being discovered. In nearly all of these camps which have been named, there are large areas of unappropriated public domain which present good chances for successful prospecting. In one of these camps namely, Bare Hills City, there is a volcanic development similar to that of Cripple Creek. The geological conditions of the other camps, however, are all different from the latter. The ores from these regions differ from those of Cripple Creek in having less tellurium, more iron and in many cases a large proportion of copper.

The underground developments in the Cripple Creek district have now in a number of cases clearly proven the deep seated origin of the Cripple Creek fissure veins and that the ores in the same extend downward into the granite floors underneath the volcanic mass without a break, dislocation of the veins or diminution of the values, thus settling the question of the permanency of the district.

The readers' attention is here called to the fine collection of ores and specimens of the vein and country rocks contained in the State Capitol in the city of Denver and collected under the auspices of the State Mining Bureau by the energetic and efficient Commissioner of Mines Mr. Harry A. Lee, also the collection of rocks in the Colorado Scientific Society's rooms in the Boston Building.

The delegation to this convention has also secured in the limited time at their disposal, a small collection of interesting and valuable specimens of ores which are on exhibition at their headquarters in the Brown Palace Hotel, and the attention of those interested is especially called to one sample in particular in this latter collection which was obtained by the writer from the Independence mine, evidently an accidental inclusion in the vein of an ore which has not been reached in any of the other mines of the district. This sample of ore is an intimate mixture of base sulphides, iron, zinc and lead with some tellurium and is the only piece thus far discovered of what may be determined the ultimate or lowest ore of the district, and in the writer's judgment positive proof of the great depth to which the Cripple Creek veins attain with paying values.

It may be stated that this sample of ore assays twenty ounces gold per ton and with a few similar fragments amounting in all to perhaps twenty pounds weight were found at a depth of 300 feet below the surface, evidently for some reason entirely unaltered either chemically or mechanically from their original deposition.

SIZE OF CLAIMS, ETC

Claims are located in the Cripple Creek district under the general State law, 1,500 feet in length by 300 feet in width. There are no local district rules modifying or limiting this law and patents are obtained to properties from the United States in the usual way.

Nearly all the volcanic area comprised within the 140 square miles of the district proper is patented, and many portions of that surrounding granite territory which is intersected by phonolite dykes.

The claims in many cases overlap each other, and many companies are operating on the consolidation of the conflicting claims forming considerable areas under one ownership within which to mine and prospect.

Many tunnel sites have been located under the United States tunnel site law, some of which are being pushed forward with more or less vigor but none of which have heretofore proven profitable ventures. Some of these tunnels when pushed further into the hills will prove very useful in the drainage of the district, and the development of mines at greater depth than at present attained, and many of the tunnel locations have been made with this end in view, namely, rather as a transportation and drainage proposition than for the sole purpose of discovering blind leads.

Many claims in the early life of the district were located with defective discoveries of mineral, but as nearly all the ground is now patented this is of no consequence and the titles are absolutely secure where all adverse litigation has been settled and the patent granted from the United States.

As already stated many of the properties in the district consist of the consolidation of a number of claims, and are operated by companies incorporated under the laws of this or other states; some are incorporated under the laws of Iowa; some under those of Wyoming; some under those of West Virginia; the laws of these different states presenting some features of supposed advantage to the incorporators over those of our own state, but in nearly all companies the stock is non-assessable.

The area of the district covered by the property of incorporated companies has never been accuurately ascertained, but a careful examination of the question indicates that out of the 10 square miles covering the central volcanic territory, about 75 per cent or seven and one-half square miles are covered by incorporated properties, and the remainder of 25 per cent is still owned by private individuals, and the amount of territory actually being worked at the present time does not exceed 20 per cent of the incorporated properties and 10 per cent of the private holdings within the ten square miles aforesaid.

Much of the property of the district is now, and has been for the past three years worked under leases, the owners preferring to have their property developed in this manner rather than let it remain idle and unoccupied through want of means on their own account; more of the best and most lasting ore discoveries in the district have been made by lessees than by individual holders of the claims.

Leases are granted on various terms, there being no uniform system throughout the district, and royalties are generally paid to the property owners on a graduated scale according to the grade of the ore mined or the extent of the workings in a mine when the lessees first begin work. Up to the beginning of this year the time limits of the leases were too short to permit the lessee to expend sufficient money in sound development, but the tendency of the past six months has been and still is, to extend the term of the leases to more than one year, which has heretofore been the maximum limit.

METHODS OF TREATMENT.

These have already been indicated in the first division of this pamphlet, and as between chlorination and cyanide each method has its advocates. The majority opinion, however, seems to be that chlorination is more regular though somewhat more expensive than cyanide in the percentage of extraction on Cripple Creek ores, but the cyanide process is the most economical for the lowest grade.

In the early life of the camp great error was made in assuming the ore to be free milling, and stamp mills to the number of twelve or fourteen were erected which proved a failure in the percentage of saving effected on the ores. Some of these stamp mills, however, are still running as heretofore stated upon ores which are too low grade to yield any profitable results in treatment by another process, and the usual method in the stamp mills is to charge $4 for milling and to give the retort and concentrates produced to the mine owner. Some forward the retorts at once to the Mint and sell the concentrates to a sampling works, or if sufficient in quantity load them into a car and ship to a smelting works.

The minimum weight of an ore shipment upon which carload rates can be obtained is eight tons, whether shipped over the Florence and Cripple Creek railroad (narrow gauge) or the Midland Terminal (broad gauge).

A careful experiment made in February last on so-called oxidized ores in an ordinary stamp mill with amalgamating plates and Gilpin County concentrating tables, from nine mines and dumps in this district showed percentages of savings thereon from 34 per cent as a minimum to 79 per cent as a maximum, the average being 53.6 per cent.

Occasionally in some of the narrow veins near the surface ore has been found so rich and the gold so free as to be panned, and the result of the pannings accumulated in a sack and shipped direct to the United States mint at Denver. In one case a lessee filled an ore sack of twelve pounds weight with pannings from two weeks work on a vein on which he was working, shipped the sack direct to the United States Mint at Denver and obtained a check of over $2,500 in payment.

There is a large amount of low grade ore in the district from $5 to $10 per ton in value in which the gold is not thoroughly free and for which a profitable mode of treatment has yet to be discovered. Various experiments have been made on electrical amalgamation and electrical cyanidization, but this problem has not yet been fully solved. Gold tellurides are not amalgamable and the difficulty seems to be in the dissolution of the chemical compound of gold, tellurium and silver by economical means.

In both chlorination and cyanidization roasting is necessary on the Cripple Creek ores before leaching their valuable contents and any process which should be devised for breaking up the chemical compound thus rendering the gold free and amalgamable, would add greatly to the ore resources of the Cripple Creek district which are immediately available.

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DESCRIPTION OF THE MINES.

Shipping Mines,

It is impossible within the limits of this pamphlet to give anything like an adequate list and description of the shipping mines, but a few are here selected for the purpose of giving the reader a fair idea of the character of developments in the district.

At the end of 1893, there were 59 claims which had either actually shipped ore, or had ore in sight ready for shipment. At the end of 1894, this number was increased to 119 claims; at the end of 1895 the shipping claims had increased to 204; at the end of 1896, the shipping claims were estimated as 225. At the present time the number of shipping mines, or those in a position to do so, has increased to 250.

Of the 119 claims shipping in the beginning of 1895, only thirty-four were equipped with steam hoisters and shaft houses, by the end of the year the steam hoists had increased to 120, of which 80 were erected permanently in the course of that year at a cost, including the shaft houses, of $276,800. During the year 1896, one hundred additional steam hoists were erected with a cost for surface improvements of the same amount as the preceding year.

As nearly as we can estimate there is at the present time about two hundred and forty steam hoists in the camp, some of which are moved from time to time as the lessees undertake new enterprises.

In 1894, there were only two air compressors at work in the camp and one compressor drill; at the beginning of this year there were twenty-two air compressors nearly all of which were in active use in the camp.

The following table shows the production in dollars of a few leading mines for the years 1893, 1894, 1895 and 1896, and also the men employed in 1896:

Name of Mine.	1893	1894	1895	1896	No. Men 1896
Portland	$27 500	$585,491	$1,700,094	$1,116,128	175
Independence......	60,000	419,439	1,122,000	900,000	100
Isabella...........	58,037	94,156	362,220	568,040	175
Victor	236,100	202,229	480,000	449,667	120
Union Gold.	32,036	137,551	400,000	286,043	120
Moose....	50,000	100,000	350,000	....	...
Doctor............	....	....	320.000	600.000	60
Strong............	29,099	11.597	312,000	300,000	60
Gold King	27,627	17 874	240.000	375,000	60
Anchoria Leland..	....	....	200,000	305,103	95
Last Dollar.......	....	....	175,000	200,000	60
C. O. D...........	23,262	54,048	150,000	....	...
Moon-Anchor......	....	....	150,000	101,135	50
Genevas...........	....	....	135,000	30,000	20
Anaconda.........	51.156	26 821	125,000	185,000	75
Raven.............	29,800	22,424	120,000	80,000	63
Elkton............	....	....	120,000	458,979	120
Summit...........	34.817	46,694	45,000	57,000	40
Zenobia...........	430,032	4,100	developing	....	...
Pharmacist........	61.932	26.000	developing	50,000	35

The blank spaces in the table are not due to non-production only, but left because returns were declined or unavailable.

Of the leading companies, the Portland, which was incorporated March, 1894, with a nominal capital of $3,000,000 in $1 shares par value, takes the lead. It owns property on Battle mountain comprising 135 acres, and includes several veins of which the four principal unite in a great ore chimney from which the principal production of the mine is made. The developments of this property to January 1, 1897, aggregate 23,115 feet in shafts and drifts and 190,851 square feet of stoping. The main working shaft has now reached a depth of 740 feet, is being sunk deeper and at 800 feet the next station will be cut for the eighth main level of the mine.

The main chute has gradually increased from a few inches in width at the surface to as much as thirty feet in width at 250 feet below the surface and maintains a width down to the 700-foot level varying by a few feet only from the maximum given. The length of the ore chute averages 200 feet. The large body of ore in the lower half of the main chute has averaged about three ounces per ton in value, and having entered the partially leached zone at the junction of the oxidized and live ores, is now averaging a little over two ounces per ton in value, with occasional bodies of very high grade ore.

On the Anna Lee mine, which is one of the Portland group, an ore chimney has been followed down continuously from the surface to a depth of 800 feet averaging in size 400 square feet on a horizontal section and increasing in average value from $25 per ton at the surface to $45 per ton at the lowest point.

The property produced in the nine months of the year 1894, 7,826 tons with a gross value of $553,975, an average of $70.80 per ton. During the year 1895, the total production was 31,516 tons with a gross value of $1,432 410, an average per ton of $45.45 in value. The production for the year 1896, during the whole of which the Anna Lee claim was shut down on account of a serious accident in the beginning of January, was 23,598 tons with a gross value of $1,116,128, being an average of $47.30 per ton. The total production of the company's property to January 1, 1897, was $2,872-268, of which a large amount was expended in the purchase of the properties, the settlement of conflicting law suits and permanent equipment. The total amount paid out in dividends to January 1, 1897, is $907,080, and the company is paying regular monthly dividends of one cent per share on the par value of the property or $30,000 per month. The equipment includes the largest hoisting engine in the district, 600-horse power, with drums 14 feet in diameter and carrying a six-inch flat rope cable. The cages are double decked and the engine has a maximum hoisting capacity of 4,500 feet in depth and can hoist at the rate of 1,000 feet per minute. In addition to this there are three batteries of two boilers each with a total of 600-horse power; air compressors of sufficient capacity to run eight drills, station pump with a capacity of 750 gallons per minute, and large ore bins and top works, offices and general improvements.

The Independence mine situated on the same mountain is owned by W. S. Stratton, and its returns are not available for public information. The main shaft is located on a vein which has been opened for three-fourths of a mile in length, and chiefly follows the course of a phonolite dyke which passes from the granite on its northern course into the main porphyritic mass of Battle mountain without break or dislocation, and at the point of contact of the two rocks the vein attains a maximum width of twenty feet. This main shaft is now over 800 feet in depth with 8 levels run approximately at distances of 100 feet apart. This mine shows larger reserves of ore in sight, blocked out and ready for shipment than any other in the district. The whole property comprises over 100 acres, and there are not less than three veins additional to the main vein on which but little development has thus far been made, but payable ore discovered in each, and undoubtedly several other minor eins exist within the property.

The Victor mine, including forty acres of patented ground, is one of the most noted in the district, as it has been so constant a producer since its location in 1892.

The vein upon which it was located is situated in the porphyry associated with a phonolite dyke, and has a general northwest and southeast course and has been located for one mile in length, the Victor mine owning 1,500 feet in length of this vein near the southern portion, and the Isabella Gold Mining Company owning 3,100 feet, opened up immediately adjoining the Victor mine. This vein, great in its longitudinal extent, branches within the Victor ground and what is known as the east branch has not yet been traced beyond to the northwest in the Isabella property.

From the organization of the present company in February 15, 1893, up to the end of 1896, the Victor had produced 6,751 tons of smelting ore averaging $146.27 per ton after deducting freight and treatment charges of $14 per ton, equal to $987,446 net, and 30,383 tons of milling ore averaging $8.24 per ton after deducting freight and treatment charges of $8.50 per ton yielded a net amount of $250,359, or a total net production for the mine of $1,237,805, of which $705,000 had been expended in dividends, $51,000 remaining as cash in the bank, and the balance expended in operating expenses and permanent improvements.

The vein has now been explored for a total depth of 550 feet and the lower levels are showing values equally high with those of the stopes already extracted. There is a large amount of ore blocked, and all the yield thus far obtained has been from the small area of 4,470 fathoms of ground.

This mine was idle for more than six months during the miners' strike in 1894.

The Isabella Company's property is situated on the north slope of Bull hill adjoining the Victor, and is capitalized for $2,250,000 at a par value of $1 per share. The plan of development comprises five shafts all sunk upon the vein (with one exception) in a row averaging 800 feet apart. These shafts are all equipped with steam hoists and are all in operation.

The total depth attained in this mine at the end of 1896, was 560 feet, on an inclined shaft following the dip of the vein.

Since the first of this year the new main vertical hoisting and drainage shaft known as the Lee shaft, has been sunk below this level and a station cut connecting with the old workings. This is a three compartment shaft 4½x13 feet in size and the hoisting frame 50 feet high with back legs 64 feet long, is the best constructed in the district.

The vein is opened continuously underground for a length of 2,100 feet, and has shown perfect continuity so far as developed downwards and laterally. The ore in this vein is deposited in the form of lenses rather than in the form of chutes, and the company has followed the policy of leasing much of its area while working the main vein with an average force of 145 men in 1895, and 185 in 1896. The total developments to the first day of January, 1897, included 2,211 feet of shafts, 13,824 feet of levels and 4,736 fathoms in stoping. The average' mine expenses per ton for the year 1896, was $22.15 including improvements, surface expenses, mining ore, developments and general expenses. The total tons of ore shipped during 1896, was 9,584 tons yielding a gross value of $568,040, showing a total net profit of the mine after deducting the cost of treatment and transportation, mining and payments to lessees, of $232,646; of this $180,000 was paid in dividends, and the average net value to the mine on the ore mined in 18 4, deducting the transportation, sampling and treatment charges was $32.63; in 1895, $41.56; in 1896. $47.72. showing a constant increase of value in the property due in part to continued improvement in sorting, but chiefly due to the increase of the values as depth was attained.

The company owns 158 acres in the property on Bull hill.

The Elkton Gold Mining Company, situate on Raven hill, is the owner of three patented claims comprising a total of seventeen acres. The vein traverses the property a distance of 1,600 feet, and has been opened up for almost its entire length. Developments consist of a double compartment shaft sunk to a depth of 400 feet, and there are drifts and levels aggregating over 8,000 feet in length. A pumping plant capable of handling 600 gallons of water per minute is installed on the 400 foot station, but the average amount of water hoisted does not exceed 350 gallons per minute.

The total tonnage produced by this company up to June 1, 1897, aggregates 13,581 tons which yielded $993,049, divided as follows: 6,151 tons smelting ore averaging $132 equals $812,791; 6,715 tons of milling ore sent to cyanide and chlorination works, averaging $25 per ton and yielding a total of $170,408; 710 tons of stamp mill and dump ore averaging $13 per ton which yielded $9,850. Of this amount much has been expended in equipment, permanent improvements and purchase of property, and the total dividends paid to June 1, 1897, aggregated $266,960; besides this the cash surplus on June 14, 1897, was $251,628, of which amount $124,316 are invested in United States bonds, a rather unusual action for a mining company.

The company is capitalized for $1,250,000 shares on a par value of $1 each, and of this amount 250,000 shares remain in the treasury.

The vein is persistent and regular and in part follows the course of a basalt dyke in the porphyry or breccia country, having a north and south course.

The Moose Company capitalized in January, 1893, at $600,000 of the par value of $1 per share, owns the Moose claim on the southeast slope of Raven hill and has developed a vein for 1,500 feet, the total length of the claim, and a depth of over 600 feet. The vein is from three to six feet in width and consists in the main of a mineralized basalt dyke, dipping slightly to the eastward from the vertical. The property was recently leased and no returns are at present available other than those in the foregoing table.

The Anaconda property aggregates 145 acres on Gold hill, and has been opened up by surface workings in a great number of places. The present workings consist of a tunnel over three-fourths of a mile in length which is connected with the surface workings by a raise 450 feet in heighth; there are numerous stopes upon the main vein of this property and rich ore is being mined by lessees from various surface workings. The vein varies from 40 feet to 30 feet in width and from $8 to $20 in value, with numerous seams of rich ore and a recent discovery below the floor of the tunnel promises to add very largely to the future output of this property.

Anchoria Leland comprises thirty-nine acres on the summit of Gold hill. It has a main shaft 5x13 feet in size, three compartment, and sunk to a depth of 750 feet. The principal developments upon this property was made by lessees during the year 1895, and five separate veins were opened, all yielding pay ore. The main vein on the property is now yielding some of the richest ore in the distrt in calaverite crystals, and the output will be largely increased in the succeeding months of this year over the first six months.

Sufficient has been stated in the above remarks regarding a very few of the properties, to indicate the importance and magnitude of the developments in the district, and show conclusive evidence that even confining the extraction to the very few square miles in the heart of the district occupied by these mines, the whole district is certain to play an important part as a steadily increasing produce of gold.

GENERAL OBSERVATIONS.

It has been impossible to obtain with any degree of accuracy such statistics as would enable a proper calculation to be made of the proportion between the high grade smelting ore and the medium and low grade milling ores of the district. The average grade of all classes of ore for the years 1895 and 1896, was almost the same, namely, $45 or two and one-quarter ounces in gold per ton. The average grades for the first four months of this year based upon the total tonnage shipped was for January and February, $48; March, $45 and April, $60. The average value of smelting ore shipped in January was $75 per ton; February, $80 per ton and March, $89 per ton, and on milling ore shipped $27 per ton in January, $25 per ton in February and March.

Comparison with the operations of the last three years indicates that the tendency at the present time is to increase the output of medium grade ores to the chlorination and cyanide mills and decrease somewhat the shipments to the smelting works, but it will be noticed that in spite of this tendency which means practically less time and expense devoted to sorting the ore, the grade of the smelting ore is increasing, and the whole average at the conclusion of this year will certainly be higher per ton than of any previous year in the existence of the district. There is no tendency, therefore, for the ores to decrease in value in depth, but the contrary.

Comparison in the first five years' existence of this district with those of the celebrated Witwatersrand in South Africa and Westralian gold fields, shows much to Cripple Creek's advantage when the amount of capital invested is taken into account.

The following table shows these facts side by side:

	Witwatersrand, S. A.		W. Australia.		Cripple Creek.	
1st year....	1886,	.... ozs.	1887.....	4,873 ozs.	1892....	29,360 ozs.
2nd year...	1887,	23,149 ozs.	1888......	3,493 ozs.	1893....	100,520 ozs.
3rd year....	1888,	208.121 ozs.	1889....	15,492 ozs.	1894....	162,500 ozs.
4th year....	1889,	369.557 ozs.	1890....	22,806 ozs.	1895....	348,500 ozs.
5th year....	1890,	494,817 ozs.	1891....	30,311 ozs.	1896....	455,000 ozs.

In Witwatersrand dictrict, South Africa, which for some years has been the most celebrated gold mining district of the world, the first discovery was made in 1885, in which year a five stamp battery was erected; in 1886, the outcrop of the conglomerate beds were proved to be auriferous for a length of eleven miles, and by the end of that year Johannesburg was staked out, but the production was so insignificant in 1886, that no official record has been kept of the same. By the end of 1887, sixty odd companies had been formed with a nominal capitalization of fifteen millions of dollars, and in 1888, a very heavy amount of capital was invested in the district which enabled rapid progress to be made as shown in that and all succeeding years.

In the Cripple Creek district but little money comparatively speaking, has been invested by people living outside of the county. Even the capitalists of Denver have been very slow to appreciate the opportunities for profitable investments in the Cripple Creek mines.

The history of the Cripple Creek district to date corresponds more closely with that of Westralia in which no capital from outside was invested for the first seven years of its existence. For the purpose of comparison, it may be stated that the average yield of the celebrated Rand ores is from $11.50 to $12 per ton, of which about one-third is profit in those mines which have not penetrated more than 300 feet below the outcrop. Of course most of this ore is oxidized, the gold free and amalgamable, but it is reasonable to anticipate that deep level mining which is now in progress from 1,000 feet and deeper will not produce a higher grade of gold, but if anything less on an average, also more refractory than the more superficial ores, and therefore the deeper level mining in that district cannot be expected to be profitable, especially when the problem of pumping water in quantities as yet entirely unknown, is taken into account. In the Cripple Creek region we find no such decrease in the value of the ores, but so far as tendency to increase in the average value as greater depth is attained, and the water problem, owing to the structure of the ground, need cause no apprehension. It is true that in some mines when water was first struck there was for a time a rush of considerable quantity under pressure, but this pressure was soon relieved and the mines which struck their first water at 300 feet and 400 feet levels below the surface are now entirely dry, proving the water exists rather in small underground reservoirs than in permanent streams.

In the way of further comparison between the Rand district of South Africa and the Cripple Creek district, it should be remembered that although the Rand gold bed has been proven to extend for a total length of nearly 50 miles, the number of reefs or veins contained in this bed amount to only ten in number, while on the other hand the number of veins already opened in the Cripple Creek district producing payable ore is not less than 250 and new discoveries are being made every week.

Sufficient facts have been adduced in the foregoing paper to show that Cripple Creek Gold Mining District has come to stay, and for a long time to come it may be relied upon as one of the principal factors in the gold product of the United States, and offers today certain and large returns for judicious investments in its mines, comparable with those of any other gold mining district in the world now occupying public attention.

SUPPLEMENTAL

At the time of going to press, a table arrives from the State Commissioner of Mines, giving statistics of ninety-nine properties of the district as returned to his office.

The table shows the name, locality, number of men employed, gross total tonnage shipped, gross amount received, and the average value per ton.

Of these ninety-nine properties, six have omitted to state the tonnage, forty-seven have omitted the gross amount received, forty-seven omitted the average value per ton. This fact emphasizes most strongly the necessity for compulsory statistics as indicated in the preface to this pamphlet.

The average value per ton as taken from forty-seven properties vary from $30 up to $350 per ton; this latter being the average value of the Orizaba ore of which 353 tons have been shipped, yielding a net amount of $123,652. So far as value is concerned this is the richest mine at present in the district, and the yield still continues of this high grade.

Further statistics regarding the district show the total number of men employed in mining and hauling ore at the present date to be 4,360, the total number of steam hoisters in operation, 153; and the total number of whims in active use, 62; to these last two items should be added a large number which are idle, probably amounting to one-third more in each case.

CHARLES J. MOORE, Mining Engineer.

Manager of the Rigi, Eclipse, etc., mines, also of the Pike's Peak, Grace Greenwood, Puffer and Gray Eagle leases, etc.

Health and Climatic Conditions of Cripple Creek.

* * *

Cripple Creek district consists of a series of rolling grass-covered hills, having an altitude ranging from 9,500 to 10,500 feet above sea level. About eight or nine miles to the east is Pike's Peak, on the other side of which are Manitou and Colorado Springs. About sixty or seventy miles to the west and south is the Sangre de Cristo range of mountains, whose altitude is from 12,000 to 15,000 feet. Between Cripple Creek and this range is the valley of the Arkansas.

The prevailing winds are from the west and south. The air is very dry, the moisture having been precipitated while coming over the Sangre de Cristo range. On account of the dryness of the atmosphere and the great number of sunny days, the climate is warm the whole year around. The winter weather consists of cycles of six or seven days of sunshine followed by one or two cold and cloudy days, with a snow fall seldom exceeding two inches. The next day the sun shines and the snow is gone. Except on the north side of the hills the snow never lies on the ground longer than two or three days. The rainy season begins early in July and lasts for five or six weeks. During this time a shower falls every day, usually beginning at 1 or 2 o'clock in the afternoon and lasting for about a half hour. The showers are usually light and as soon as the rain ceases the sun shines again. The climate especially with regard to dryness and moisture of the atmosphere, temperature and sunshine is very like that of Colorado Springs, now known over the world as a resort for pulmonary disease. The only difference is in the altitude.

The water supply of the city of Cripple Creek is derived from springs at the foot of Pike's Peak, fed by the melting snow and running through a granite formation so that there is not a trace of mineral impurity in it. And the presence of decaying vegetable or animal matter is precluded by the altitude of its source, being just below timber line and above the haunts of man or animals. So that the water is perfectly pure and wholesome.

The city has an excellent system of sewerage which has been constructed during the past year and thus the sanitary condition has been greatly improved.

To become acclimated in Cripple Creek is practically to become accustomed to the altitude. This necessitates organic change in the structure of the lungs and heart and this change is greater in those in whom these organs are poorly developed or weak. On account of the rarity of the atmosphere people with healthy lungs find it necessary at first to breathe oftener and more deeply in order to get sufficient oxygen, but in a few months the capacity of the lungs for air is increased and the respiration is then not more frequent than in a lower altitude. The chest has increased in size. One year's residence in Cripple Creek will cause an increase in the circumference of the chest of two inches. The normal average expansion of the chest in men who have lived in Cripple Creek for a year or longer is four inches.

The increased demand for oxygen while causing deeper and more rapid respiration also necessitates a greater supply of blood to the lungs to absorb the oxygen, hence we get increased heart action. A heart which beats 70 to 80 times a minute in a low altitude will rise to 100 beats a minute in Cripple Creek. After a few months, however, the heart action like the respiration, becomes normal again. This is because the heart muscle has become stronger and is able to keep up the circulation without working more rapidly than it formerly did in a lower altitude.

The increased supply of blood and air to every portion of the lungs produces a marked improvement in their nutrition and thus enables nature to get rid of certain deseased conditions. Medical authorities are agreed that the ideal climate for consumptives is that which combines a dry atmosphere with altitude. The dryer the atmosphere is the better and the elevation above sea level should be the greatest in which the individual can live without distress in breathing. Cripple Creek, therefore, has an ideal climate for consumption in its early stages and is especially recommended to those who have resided in Colorado for some time with benefit. In rapidly growing children or young adults of small lung capacity, whose lungs are healthy, but poorly developed, Cripple climate is most beneficial.

The expenditure of nervous energy is greater than in lower altitudes. A miner having worked eight hours is more tired than a farm hand who has worked for twelve hours in harvest. It is essential that plenty of sleep be had, eight or nine hours of each twenty-four.

An impression is prevalent throughout Colorado and neighboring states that Cripple Creek's climate is not healthful; that disease and death threaten all who may have the hardihood to visit or reside in the district. This impression is a very erroneous one and does great injustice to what is really a very salubrious climate. This impression probably originated from the fact that in the winter of 1895-6, during the boom when the city had neither employment nor sleeping accommodations for the crowds who came, hundreds of hungry men were compelled to sleep on the floors of saloons. Pneumonia was then epidemic and the death rate was high. During the month of February, 1896, the funerals in Cripple Creek averaged nearly three a day. But since the great fire the health has greatly improved. Better sleeping accommodations, less crowding, improved sanitary conditions have combined to materially lessen the amount of sickness. Not only is there very little sickness in Cripple Creek, but the mortality from prevailing diseases is really less than in the same diseases in lower altitudes. Comparing the mortality of pneumonia and typhoid fever in Cripple Creek with that in eastern states, we find that during the past year out of a total of one hundred and twenty-eight cases of pneum sixteen died, making a mortality of twelve and one-half per cent and of a total of one hundred and seventy-seven cases of typhoid fever el died, making a mortality of less than six and one-half per cent. In eastern states the mortality is given at from seventeen to twenty-five cent in pneumonia and from fifteen to twenty per cent in typhoid fe The figures given are authentic and it is to be hoped may c the unjust and unfounded statements frequently heard that Cripple C is not a healthful place in which to live.

J. A. WHITING, M. D.

Religious, Educational and Social Life in Cripple Creek

* * *

Within the Cripple Creek Mining District are situated eight incorporated towns and cities named according to size as follows: Cripple Creek, Victor, Anaconda, Goldfield, Gillett, Altman, Lawrence and Elkton.

The opinion that commonly prevails of a mining camp is, that the greater part of the citizens are free-booters, hold-ups and robbers and that life and property are not safe. It is with pride after having been a resident of the camp of Cripple Creek five years, and having formerly lived in a number of other camps, that I say from this personal knowledge, nowhere can there be found a more progressive, respectable, lawabiding and God loving people than in Cripple Creek. Ever wide awake to their interests, religiously, socially as well as financially.

There are in the city of Cripple Crek six churches, the Methodist, Congregational, Baptist, Episcopal, Christian and Catholic, all of which have a large membership, and most of them, fine church buildings. All the churches with the exception of the Catholic, were destroyed by the fire of April, 1896, and most of them lost their church records. Regular services are held twice every Sabbath by all these six denominations, besides several other organizations that have no church buildings. Prior to the great fire each had been successful in the erection of comfortable edifices for worship. After the trials of hearing the Holy word propounded under tents, to see their laborious efforts lain low in ashes was with their many other sorrows and losses cast aside, and today churches already erected and under way are a credit to this untiring and energetic people.

Victor has five churches, four Protestant and one Catholic. In nearly all these churches Sunday School is held and the membership of the Methodist Sunday School in Cripple Creek is 227, which is a fair sample of others.

A short statement of the history of one church will suffice for all. The St. Andrew's Episcopal Mission was organized in December, 1892. Services were first held in the Shield's Hall, over the Arcade saloon on Main street, on Christmas day. Thirteen persons were present. In the following June, Rev. C. Y. Grimes was appointed Rector in charge. From June 18, until November 19, services were held over the Kentucky Liquor Company's saloon on Bennett avenue. On November 26, 1893, a brick church was erected and dedicated by Bishop Spaulding. April 6, 1896, St. Andrew's

Mission was organized as a parish, and in the same month, a Guild House was completed. Although both weredestroyed by fire, they were soon rebuilt. This church has one hundred and forty-six communicants and the enrollment of the Sunday School is seventy-five.

Rev. C. L. Kirk, the permanent minister of the Baptist church, has been a prominent figure in Cripple Creek since his arrival in 1894. A man of the times and for the place, he has done honest work and his church was the first to rebuild after the fire. The Baptists have now a beautiful church building that cost $4,000 and church property worth $6,000.

The Young People's Society of Christian Endeavor have had an organization since 1893 and a membership of one hundred and fifty. The Epworth League was organized in 1893, and has a membership of one hundred and twenty-five. The Young Men's Christian Association was organized in 1893, but has not prospered, although at one time, it had a membership of two hundred.

A Free Reading Room is conducted by Mrs. E. M. J. Cooley, a retired Methodist lady preacher and is in a flourishing condition, and at the last meeting of our city council, substantial assistance was voted to this project, which will hereafter be conduced as a Free City Library.

The Catholics have completed a ten thousand dollar hospital and contemplate the erection of a substantial church edifice in the near future, also the Methodists have already commenced work on their new church building, which is to cost about $6,000.

During the early days of the camp, nearly all of the churches held their services in tents where the faithful few gathered to hear the Word preached; and the writer distinctly remembers an old colored woman who was as punctual in her attendance on divine service as the minister himself, and who always sat in the "amen corner" of the tent at the right of the pulpit, and who never failed to punctuate the sermon with such remarks as "praise de Lord," "amen!" The old lady now worships with her own people under their vine and fig tree and since her husband has "struck it rich" in a Cripple Creek mine, has something substantial to praise God for.

The Congregational minister, Rev. H. M. Lyman, secured a half interest in a mining claim in the center of the district and by its sale, became independent for life.

Dr. J. C. Horn, present preacher in charge of the M. E. church, has been college president, lawyer and minister. Dr. Horn has a great deal of the "Peter Cartwright aggressiveness" in his make-up, is very popular and hits hard blows for the Lord's cause.

The Salvation Army struck Cripple Creek in 1894, and since that time, almost any evening the sound of the drum and tambourine could have been heard on the streets.

Song and prayer services are very common on the streets and many of the orthodox church members take part therein. One colored brother gives regular Sunday afternoon harangues on the street to large and curious crowds that gather to hear him. On one occasion a company of beautiful singers had drawn a crowd of about five hundred people on the streets of Cripple Creek, and while the pious minstrels were singing "There is Sunshine in my Soul," there came, jostling his way through the crowd and seemingly more anxious to secure a favorable position to see and hear than anyone else, a boy who carried aloft a transparency inscribed as follows upon both sides, "Great Show at the Topic Theatre! L adies and Gentlemen invited."

All of the Cripple Creek District is consolidated into School District No. 56 and includes the population of the whole district. Fifty teachers are employed in the district schools for the present year and the number of children of school age is 4,211.

The growth of the schools will be found in the following facts: The first school meeting was held on the 7th day of March, 1892, when only one teacher was employed and the use of the Congregational Gospel tent was tendered to the board for school purposes and gladly accepted. At that meeting a collection that amounted to $150 was taken up to build a school house. In August, 1892, five schools were opened, one in Barry; one in Squaw Gulch; one in Lawrence; one in Cripple Creek and one in Fremont. That year, the report showed as follows: Pupils 132, teachers 5; the '93 report shows number of pupils 580, teachers 9; in 1894, number of pupils 1,037, teachers 11; in 1895, teachers 20, pupils 1,633; in 1896, 32 teachers, 3,162 pupils. A regular curriculum with nine grades has been established. We have in tne city of Cripple Creek three large school buildings and additions are being made to two with other school houses in every town in the district. These buildings are still insufficient to accommodate the pupils.

A Woman's Club having a membership of two hundred and eighty-three, with all of the departments organized, is in a flourishing condition, with Mrs. Thomas Withers, president. This club is second in membership in the state, being exceeded alone by the Denver club.

The programmes in each department are carefully arranged and at all times very interesting. Especial mention is due the Musical department under the direction of Mrs. C. J. Moore, the chorus being of very high order. The literature department adds greatly to each programme with carefully prepared and instructive papers. Also a number of other clubs, literary and social. The Columbine (being the name of the Colorado state flower) is a very interesting and instructive literary club, which was organized in the early days of the camp.

The Sheltering Arms Society is a benevolent or Aid Society, organized after the great fire for the relief of the suffering and homeless, a fund being donated by the general city relief fund to aid the ladies in their efficient and much needed work.

Last, but not least are the number of social art clubs in which the cordial and hospitable ladies take great delight in entertaining in their several homes alphabetically each week, introducing their visiting friends,

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thereby proving the characteristic of a mining camp, informal hospitality to all.

The Masons, Odd Fellows, Knights of Pythias, Order of Eastern Star, A. O. U. W., Daughters of Rebekah, Rathbone Sisters, Elks, Red Men, Woodmen of the World, Miners' union, Clerks and Waiters' union, and a dozen other secret and benevolent organizations have flourishing and prosperous lodges here.

The moral and social status of Cripple Creek Mining District is good, and no father need fear to bring his family here, as the social, moral and intellectual advantages of Cripple Creek rank favorably with those of the older cities.

MRS. T. P. AIRHEART.

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Gaylord Bros.
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